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Orbital elements of double stars: ADS 4371

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INTERNATIONAL ASTRONOMICAL UNION COMMISSION 26

(DOUBLE STARS)

INFORMATION CIRCULAR No. 161 (FEBRUARY 2007)

NEW ORBITS

ADS α 2000 δ	Name n	P a	T i	e ω	Ω (2000) Last ob.	2007 2008	Author(s)
1321 01409+1117	A 2320 9.6541	37 ^y 29 0 ^{''} 156	1997.49 59°2	0.711 54°2	74°4 1995.92	270°9 0 ^{''} 198 273.0 0.203	DOCOBO et al. (*)
- 03272+0944	HDS 433 1.6981	212.0 1.21	2003.2 57.0	0.66 60.7	332.3 2000.7595	79.9 0.255 94.0 0.288	RICA
4076 05322+7049	A 1034 0.7557	476.40 1.028	2311.52 103.4	0.297 164.3	126.2 1995.770	139.4 0.915 139.2 0.923	CVETKOVIC
4371 05474+2939	BU 560 0.4438	811.2 1.520	1860.66 129.7	0.644 242.5	139.5 2007.083	126.0 1.65 125.8 1.65	SCARDIA et al. (**)
- 06255+2320	MCA 26 3.0576	117.74 0.153	1984.28 81.6	0.559 311.6	145.8 1996.8691	201.2 0.030 211.7 0.028	ZIRM
7074 08539+0149	A 2554 4.3057	83.61 0.361	1986.30 124.7	0.218 129.9	148.5 1996.8665	280.0 0.256 275.1 0.249	ZIRM
- 15227-4441	COP 2 1.1260	319.71 0.756	2014.28 119.8	0.635 21.3	117.6 2000.40	129.3 0.292 126.4 0.291	ZIRM
- 16450+2928	COU 490 3.5960	100.1 0.218	2007.34 130.1	0.151 68.8	1.7 2005.520	305.0 0.131 298.4 0.127	DOCOBO & TAMAZIAN
10769 17457+1743	STF2205 0.1826	1971.12 3.885	2031.29 48.3	0.720 246.4	158.5 2002.491	359.1 1.105 0.2 1.091	CVETKOVIC
- 18035+4032	COU 1785 7.8740	45.72 0.135	1995.00 65.7	0.483 147.0	52.8 2005.515	1.9 0.084 8.5 0.094	DOCOBO & LING
11033 18044+0337	A 2257 1.0827	333. 0.324	1988.73 73.5	0.829 274.3	13.6 2005.520	27.0 0.154 27.7 0.157	DOCOBO & TAMAZIAN

NEW ORBITS (continuation)

ADS α 2000 δ	Name n	P a	T i	e ω	Ω (2000) Last ob.	2007 2008	Author(s)
- 20216+1930	COU 327 AB 8.4786	42.46 0.147	1986.60 85.0	0.577 303.0	68.0 2005.516	239.6 0.119 240.5 0.129	DOCOBO & LING
16072 22339+6550	HU 983 2.7184	132.43 0.185	2005.27 68.7	0.745 226.0	144.7 1998.7795	55.1 0.019 98.3 0.029	ZIRM
16270 22478-0414	STF 2944 AB 0.3103	1160.28 4.119	2080.72 43.8	0.755 42.5	4.3 2005.8120	298.3 1.947 299.0 1.934	ZIRM
16633 23159-0905	BU 1220 BC 4.3057	83.61 0.469	1950.98 87.0	0.448 145.0	104.1 1986.72	103.7 0.616 103.8 0.610	ZIRM
16648 23175+1652	HU 497 BC 1.8467	194.9 0.379	2071.80 109.2	0.357 92.0	62.0 2003.712	87.7 0.296 86.8 0.301	LING

(*) DOCOBO, ANDRADE & CAMPO (Visual-Spectroscopic orbit)

(**) SCARDIA, PRIEUR, PANSECCHI & ARGYLE

PAPERS PUBLISHED IN 2006

1. ABAD, C.; BONGIOVANNI, A. & GUILLEN, Y. (Editors): *Third International Meeting of Dynamic Astronomy in Latin America (ADeLA-2004)* . Rev. Mex. A. A.(SC) Vol 25 (2006).
2. ABT, H. A. & WILLMARTH, D.: *The Secondaries of Solar-Type Primaries. I. The Radial Velocities* . Astrophys. J. Sup. Ser. **162** (1), 207 (2006).
3. ALZNER, A.: *Micrometer Measurements from 2004.94 to 2005.96*. The Webb Soc. Double Star Section Cir. **14**, 6 (2006).
4. ARGYLE, R.: *Micrometer Measurements from 2005.0 to 2006.0*. The Webb Soc. Double Star Section Cir. **14**, 1 (2006).
5. ARMSTRONG, J. T. et al.: *The Hyades binary θ^2 Tauri: Confronting evolutionary models with optical interferometry* Astron. J. **131** (5), 2643 (2006)
6. AUSSELOOS, M. et al.: *High-precision Elements of Double-lined Spectroscopic Binaries from Combined Interferometry and Spectroscopy*. Astron. Astrophys. **454** (1), 259 (2006).
7. BAGNUOLO, W. G. et al.: *First Results from the CHARA Array. V. Binary Star Astrometry: The Case of 12 Persei*. Astron. J. **131** (5), 2695 (2006).
8. BAINES, D. et al.: *On the Binarity of Herbig Ae/Be Stars*. Monthly Notices **367** (2), 737 (2006)
9. BALEGA, I. I. et al.: *Orbits of New Hipparcos Binaries. II*. Astron. Astrophys. **448** (2), 703 (2006).
10. BALEGA, I. I. et al.: *Speckle interferometry of nearby multiple stars. III*. Bull. Special Astrophys. Obs., **59**, 20 (2006).
11. BASRI, G. & REINERS, A.: *A Survey for Spectroscopic Binaries Among Very Low Mass Stars* Astron. J. **132** (2), 663 (2006).
12. BODEN, A. F.; TORRES, G. & LATHAM, D. W.: *A Physical Orbit for the High Proper Motion Binary HD 9939*. Astrophys. J. **644** (2), 1193 (2006).
13. BOUY, H. et al.: *Multiplicity of Very Low-Mass Objects in the Upper Scorpius OB Association: a possible wide binary population*. Astron. Astrophys. **451** (1), 177 (2006).
14. BOYAJIAN, T. S. et al: *The B Supergiant Components of the Double-lined Binary HD 1383*. Astrophys. J. **646** (2), 1209 (2006).
15. BRANDEKER, A.; JAYAWARDHANA, R. & KHAVARI, P.: *Deficit of Wide Binaries in the η Chamaeleontis Young Cluster*. Astrophys. J. **652** (2), 1572 (2006).
16. CATALA, C.; FORVEILLE, T. & LAI, O.: *Adaptative Optics Observations of the Binary Star HD 43587* Astron. J. **132** (6), 2318 (2006)

17. CHRISTOU, J. C. & DRUMMOND, J. D.: *Measurements of Binary Stars, Including Two New Discoveries, With the Lick Observatory Adaptive Optics System* *Astron. J.* **131** (6), 3100 (2006)
18. CORREIA, S. et al.: *A VLT/NACO Survey for Triple and Quadruple Systems Among Visual Pre-main Sequence Binaries.* *Astron. Astrophys.* **459** (3), 909 (2006).
19. CVETKOVIC, Z. et al: *CCD Measurements of Double and Multiple Stars at NAO Rozhen. II.* *Serv. A. J.* **172**, 53 (2006).
20. CVETKOVIC, Z. & NOVAKOVIC, B.: *Orbits for Sixteen Binaries.* *Serv. A. J.* **173**, 73 (2006).
21. DESIDERA, S. et al.: *Spectroscopic Characterization of a Sample of Southern Visual Binaries.* *Astron. Astrophys.* **454** (2), 553 (2006).
22. DIONNE, D. & ROBERT, C.: *Evolutionary Synthesis Models of Young Star-forming Regions: The Influence of Binary Stars.* *Astrophys. J.* **641** (1), 252 (2006).
23. DOCOBO, J. A. & Andrade, M.: *A Methodology for the Description of Multiple Stellar Systems with Spectroscopic Subcomponents.* *Astrophys. J.* **652** (1), 681 (2006).
24. DOCOBO, J. A. et al.: *Speckle Measurements and Differential Photometry of Visual Binaries with the 6 Meter Telescope of the Special Astrophysical Observatory.* *Astron. J.* **132** (3), 994 (2006).
25. DONNISON, J. R.: *The Hill Stability of a Binary or Planetary System During Encounters with a Third Inclined Body.* *Monthly Notices* **369** (3), 1267 (2006)
26. DUCHÊNE, G. et al.: *Accurate Stellar Masses in the Multiple System T Tauri .* *Astron. Astrophys.* **457** (1), L9 (2006).
27. EGGLETON, P. P. & KISSELEVA-EGGLETON, L.: *A Mechanism for Producing Short-Period Binaries .* *Astrophys. Space Science* **304** (1-4), 75 (2006).
28. EVANS, N. R. et al: *Cepheids in Multiple Systems: ADS 14859.* *Pub. Astron. Soc. of the Pacific* **118** (849), 1545 (2006).
29. FEIGELSON, E. D. et al.: *51 Eridani and GJ 3305: A 1015 Myr Old Binary Star System at 30 Parsecs* *Astron. J.* **131** (3), 1730 (2006)
30. FEKEL, F. C. & HENRY, G. W.: *Spectroscopy and Photometry of the Double-Lined Binary HD 149420* *Astron. J.* **131** (3), 1724 (2006)
31. FEKEL, F. C. et al.: *HD 131861, a Double-Line Spectroscopic Triple System* *Astron. J.* **132** (5), 1910 (2006)
32. FOELLM, C.; MOFFAT, A.F.J. & MARCHENKO, S.V.: *The Massive Eclipsing LMC Wolf-Rayet Binary BAT99-129 - I. Orbital Parameters, Hydrogen Content and Spectroscopic Characteristics .* *Astron. Astrophys.* **447** (2), 667 (2006).

33. FRASCA, A. et al.: *Newly Discovered Active Binaries in the RasTyc Sample of Stellar X-ray Sources - I. Orbital and Physical Parameters of Six New Binaries.* *Astron. Astrophys.* **454** (1), 301 (2006).
34. GAMEN R. et al.: *The First Orbital Solution for the Massive Colliding-Wind Binary HD 93162 (WR 25) .* *Astron. Astrophys.* **460** (3), 777 (2006).
35. GATEWOOD, G. & HAN, I.: *An Astrometric Study of Procyon* *Astron. J.* **131** (2), 1015 (2006)
36. GELINO, C. R.; KULKARNI, S. R. & STEPHENS D. C. : *Evidence of Orbital Motion in the Binary Brown Dwarf Kelu-1AB .* *Pub. Astron. Soc. of the Pacific* **118** (842), 611 (2006).
37. GOLDIN, A. & MAKAROV. V. V.: *Unconstrained Astrometric Orbits for Hipparcos Stars with Stochastic Solutions .* *Astrophys. J. Sup. Ser.* **166** (1), 341 (2006).
38. GONZALEZ, J. F. & LEVATO, H.: *Separation of Composite Spectra: the Spectroscopic Detection of an Eclipsing Binary Star.* *Astron. Astrophys.* **448** (1), 283 (2006).
39. GONZALEZ, J. F. et al.: *AO Velorum: a Young Quadruple System with a ZAMS Eclipsing BpSi Primary .* *Astron. Astrophys.* **449** (1), 327 (2006).
40. GRIFFIN, R. E. M.; GRIFFIN, R. F. & STICKLAND, D. J.: *Composite Spectra Paper 14: HR 1129, a Long-Period Binary Showing Evidence of Circumbinary Material.* *Monthly Notices* **373** (4), 1351 (2006).
41. GRIFFIN, R. F. : *Spectroscopic Binary Orbits from Photoelectric Radial Velocities - Paper 186: 56 Pegasi.* *The Observatory* **126**, 1 (2006).
42. GRIFFIN, R. F. : *Spectroscopic Binary Orbits from Photoelectric Radial Velocities - Paper 187: HR 3936 and HD 100215.* *The Observatory* **126**, 119 (2006).
43. GRIFFIN, R. F. : *Spectroscopic Binary Orbits from Photoelectric Radial Velocities - Paper 188: HD 14544, HDE 237201, 66 Orionis, HD 216218, and HD 220102.* *The Observatory* **126**, 186 (2006).
44. GRIFFIN, R. F. : *Spectroscopic Binary Orbits from Photoelectric Radial Velocities - Paper 189: HD 14415, HR 3112, and HR4454.* *The Observatory* **126**, 265 (2006).
45. GRIFFIN, R. F. : *Spectroscopic Binary Orbits from Photoelectric Radial Velocities - Paper 190: HD 109484, HD 110376, HD 119334, and HD 120531.* *The Observatory* **126**, 318 (2006).
46. GRIFFIN, R. F. : *Photoelectric Radial Velocities, Paper XVII The Orbits of 30 Spectroscopic Binaries in the Southern Clube Selected Areas.* *Monthly Notices* **371** (3), 1159 (2006).
47. GRIFFIN, R. F. & BOFFIN, H. M. J.: *Spectroscopic Binary Orbits from Photoelectric Radial Velocities - Paper 191: HD 17310, HD 70645, and HD 80731.* *The Observatory* **126**, 401 (2006).

48. GRIFFIN, R. F. & CORNELL, A. P.: *Photoelectric Radial Velocities, Paper XVI 625 Ninth-Magnitude K0 Stars in the Six Southern Clube Selected Areas*. Monthly Notices **371** (3), 1140 (2006).
49. HENRY, G. W. et al.: *HD 71636, a Newly Discovered Eclipsing Binary* Astron. J. **132** (6), 2489 (2006)
50. HERBIG, G. H. & GRIFFIN, R. F.: θ^1 *Orionis E as a Spectroscopic Binary* Astron. J. **132** (5), 1763 (2006)
51. HILLWIG, T. C. et al: *Binary and Multiple O-Type Stars in the Cassiopeia OB6 Association* . Astrophys. J. **639** (2), 1069 (2006).
52. HORCH, E. P. et al.: *Speckle Interferometry of Southern Double Stars. III. Measures from the CESCO Observatory, 1994-1996* Astron. J. **131** (2), 1000 (2006)
53. HORCH, E. P. et al.: *CCD Speckle Observations of Binary Stars from the Southern Hemisphere. IV. Measures During 2001* Astron. J. **131** (6), 3008 (2006)
54. HORCH, E. P. et al.: *Fourier Analysis of Hubble Space Telescope Fine Guidance Sensor Data of Binary Stars and Application to the Multiple System HD 1547948* Astron. J. **132** (2), 836 (2006)
55. HORCH, E. P.; FRANZ, O. G. & VAN ALTENA, W. F.: *Characterizing Binary Stars Below the Diffraction Limit with CCD-based Speckle Imaging* Astron. J. **132** (6), 2478 (2006)
56. KHALIULLIN, KH. F. & KHALIULLINA, A. I.: *Apsidal motion and the third-body problem in the binary HS Her* . Astron. Reports **50** (10), 814 (2006).
57. KIYAEVA, O. V.: *Astrometric Study of the Triple Star ADS 9173*. Astron. Lett. **32** (12), 836 (2006).
58. KÖHLER, R. et al.: *Binary stars in the Orion Nebula Cluster* . Astron. Astrophys. **458** (2), 461 (2006).
59. LAW, N. M.; HODGKIN, S. T. & MACKAY, C.D.: *Discovery of Five Very Low Mass Close Binaries, Resolved in the Visible with Lucky Imaging* . Monthly Notices **368** (4), 1917 (2006)
60. LIBICH, J. et al.: *The New Orbital Elements and Properties of ϵ Persei* . Astron. Astrophys. **446** (2), 583 (2006).
61. LUCY, L. B.: *Spectroscopic Binaries With Components of Similar Mass* . Astron. Astrophys. **457** (2), 629 (2006).
62. MALKOV, O. Y. et al.: *A Catalogue of Eclipsing Variables* . Astron. Astrophys. **446** (2), 785 (2006).
63. MARTIN, E. L. et al.: *Resolved Hubble Space Spectroscopy of Ultracool Binary Systems* . Astron. Astrophys. **456** (1), 253 (2006).

64. MASON, B. D. et al.: *Speckle Interferometry at the US Naval Observatory. XI.* Astron. J. **131** (5), 2687 (2006).
65. MASON, B. D. et al.: *Speckle Interferometry at the US Naval Observatory. XII.* Astron. J. **132** (5), 2219 (2006).
66. McELWAIN, M. W. & BURGASSER, A. J.: *Resolved Spectroscopy of M Dwarf/L Dwarf Binaries. II. 2MASS J17072343-0558249AB* Astron. J. **132** (5), 2074 (2006)
67. MELIKIAN, N. D.; TAMAZIAN, V. S. & KARAPETIAN, A. A.: *Spectral and Photographic Studies of the Known T Association in the Neighborhood of Cyg OB7* Ap **49**, 320 (2006).
68. MELIKIAN, N. D. et al.: *Spectral study of the flare star EV Lac* Ap **49**, 488 (2006).
69. MONTAGNIER, G. et al.: *Five New Very Low Mass Binaries* . Astron. Astrophys. **460** (2), L19 (2006).
70. MUGRAUER, M. et al.: *A Search for Wide Visual Companions of Exoplanet Host Stars: The Calar Alto Survey.* Astron. Nach. **327** (4), 321 (2006).
71. MUTERSPAUGH, M. W. et al: *PHASES Differential Astrometry and Iodine Cell Radial Velocities of the Pegasi Triple Star System.* Astrophys. J. **636** (2), 1020 (2006).
72. MUTERSPAUGH, M. W. et al: *Limits to Tertiary Astrometric Companions in Binary Systems* . Astrophys. J. **653** (2), 1469 (2006).
73. NEILL, I. et al: *2MASS J22521073-1730134: A Resolved L/T Binary at 14 Parsecs.* Astrophys. J. **639** (2), 1114 (2006).
74. NOVAKOVIC, B. & TODOROVIC, N.: *Orbits of Four Double Stars.* Serv. A. J. **172**, 21 (2006).
75. OLEVIC, D. & CVETKOVIC Z.: *Dynamical Masses of the Components in o Andromedae* Astron. J. **131** (3), 1723 (2006)
76. PHAN-BAO, N. et al: *LP 714-37: A Wide Pair of Ultracool Dwarfs Actually Is a Triple.* Astrophys. J. Lett. **645** (2), L153 (2006).
77. POGODIN, M. A. et al.: *The Herbig B0e Star HD 53367: Circumstellar Activity and Evidence of Binarity* . Astron. Astrophys. **452** (2), 551 (2006).
78. PRIEUR, J.-L.; CARQUILLAT, J.-M. & GRIFFIN, R. F.: *Contribution to the Study of Binaries with Spectral Types F, G, K, and M - XI. Orbital Elements of Three Red-Giant Spectroscopic Binaries: HR 1304, HR 1908, and HD 126947.* Astron. Nach. **327** (7), 686 (2006).
79. PRIEUR, J.-L.; CARQUILLAT, J.-M. & IMBERT, M.: *Contribution to the Search for Binaries Among Am Stars VII. Orbital Elements of Seven New Spectroscopic Binaries, Implications on Tidal Effects.* Monthly Notices **372** (2), 703 (2006)

80. RAGHAVAN, D. et al.: *Two Suns in The Sky: Stellar Multiplicity in Exoplanet Systems*. *Astrophys. J.* **646** (1), 523 (2006).
81. RUCINSKI, S. M. & DUERBECK, H. W.: *Radial Velocity Studies of Southern Close Binary Stars. I. Winter Systems* *Astron. J.* **132** (4), 1539 (2006)
82. SCARDIA, M. et al.: *Speckle observations with PISCO in Merate - II. Astrometric measurements of visual binaries in 2004*. *Monthly Notices* **367** (3), 1170 (2006)
83. SCARDIA, M. et al.: *Speckle Observations with PISCO in Merate - III. Astrometric Measurements of Visual Binaries in 2005 and Scale Calibration with a Grating Mask*. *Monthly Notices MNRAS*.tmp.1331S (2006).
84. SCHAEFER, G. H. et al.: *Dynamical Mass Estimates for Incomplete Orbits: Young Multiple Stars in Taurus and Ophiuchus*. *Astron. J.* **132** (6), 2618 (2006)
85. SHAKHOVSKOJ, D. et al.: *Photopolarimetric Activity and Circumstellar Environment of the Young Binary System DF Tau*. *Astron. Astrophys.* **448** (3), 1075 (2006).
86. SIMON, M.; BENDER, C. & PRATO, L.: *The Gl569 Multiple System*. *Astrophys. J.* **644** (2), 1183 (2006).
87. TAMAZIAN, V. S. & DOCOBO, J. A.: *Orbits and Differential Photometry for Visual Binaries A 1529, HU 610 and COU 2031* *Astron. J.* **131** (5), 2681 (2006)
88. TAMAZIAN, V. S.: *Visual Orbit, Differential Photometry and Dynamical Mass of DG Leo* *Astron. J.* **132** (5), 2156 (2006)
89. TAMAZIAN, V. S. et al.: *MK Classification and Dynamical Masses for Late-Type Visual Binaries*. *Pub. Astron. Soc. of the Pacific* **118** (844), 814 (2006).
90. TANGO, W. J. et al.: *Orbital Elements, Masses and Distance of λ Scorpii A and B Determined with the Sydney University Stellar Interferometer and High-Resolution Spectroscopy*. *Monthly Notices* **370** (2), 884 (2006)
91. THOMPSON, B. & YEELIN, T.: *Duplicity in 16 Piscium Confirmed from its Occultation by γ Iris on 2006 May 5*. *Pub. Astron. Soc. of the Pacific* **118** (850), 1648 (2006).
92. THOREL, J. C. & THOREL, Y.: *Mesures of visual double stars (18th series)*. *Obs. et Travaux* **63**, 11 (2006).
93. TOKOVININ, A. et al.: *Tertiary Companions to Close Spectroscopic Binaries*. *Astron. Astrophys.* **450** (2), 681 (2006).
94. TOMKIN, J. & FEKEL, F. C.: *New Precision Orbits of Bright Double-Lined Spectroscopic Binaries. I. RR Lyncis, 12 Bootis and HR 6169* *Astron. J.* **131** (5), 2652 (2006)
95. TORRES, G.: *The Astrometric-Spectroscopic Binary System HIP 50796: An Over-massive Companion* *Astron. J.* **131** (2), 1022 (2006)

96. TORRES, G.: *The Multiple System HD 27638* Astron. J. **131** (3), 1702 (2006)
97. TORRES, G. et al: *The Eclipsing Binary V1061 Cygni: Confronting Stellar Evolution Models for Active and Inactive Solar-Type Stars* . Astrophys. J. **640** (2), 1018 (2006).
98. VARRICATT, W. P. & ASHOK, N.M.: *WR 143: a WolfRayet binary*. Monthly Notices **365** (1), 127 (2006)
99. WYCOFF, G.L.; MASON, B. D. & URBAN, S. E.: *Data Mining for Double Stars in Astrometric Catalogs* Astron. J. **132** (1), 50 (2006).
100. ZHUCHKOV, R. Y.; ORLOV, V. V. & RUBINOV, A. V.: *Dynamical Stability of the Quadruple Systems HD 68255/6/7 and HD 76644* Astron. Reports **50** (1), 62 (2006)

ANNOUNCEMENT

The ESO workshop “Multiple Stars across the H-R Diagram” was held in Garching on July 12-15, 2005. The Proceedings of this meeting are available electronically at www.eso.org/gen-fac/meetings/ms2005/proc_papers.html

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The deadline for contributions to Information Circular No. 162 is:

June 15th 2007

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